REMARKS

In the present Amendment, claim 1 has been amended to specifically recite "a polymeric support matrix," "a first phase separation of the exterior of the nascent fiber," and "a hollow or solid fiber containing about 60-95 wt% of particulate material." These amendments are supported by the disclosure, for example, page 4, line 8; page 11, 2nd paragraph; page 6, lines 10-11; page 9, 2nd paragraph; and page 10, lines 27-29. Claim 7 has been amended to recite that the fibre comprises about 60-70% by weight of particulate material. This amendment is supported by the disclosure, for example, page 11, line 2. Claim 6 has been canceled without prejudice or disclaimer. Claim 8 was previously canceled. No new matter has been added.

Upon entry of the Amendment, claims 1-5, 7 and 9-35 will be all the claims pending in the application.

I. Information Disclosure Statement

The Office Action asserts that "[t]he information disclosure statement filed September 24, 2008 fails to comply with 37 C.F.R. § 1.98(a)(2), which requires a legible copy of each cited foreign patent document. ...but the following information referred to therein has not been considered: DD 233385, since applicant has not provided an English translation of said document."

Applicants respectfully disagree. MPEP § 609.04(a) states that "If no translation is submitted, the examiner will consider the information in view of the concise explanation and insofar as it is understood on its face .... The concise explanation may be ... part of the specification." In the present case, the Information Disclosure Statement filed September 24, 2008, indicates that DD 233385 has been cited in a Search Report and in the Specification at page 3. Therefore, this filing is in compliance with 37 C.F.R. § 1.98. The Examiner is respectfully requested to consider DD 233385 and make it of record.

II. Response to Rejections under 35 U.S.C. §§ 102 and 103

a. Claims 1-3, 6, 7, 9-22, 25-32 and 34 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 6,500,233 to Miller et al., as evidenced by SG 90604 to Dongfei et al.

b. Claims 4, 24 and 33 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Miller et al.

c. Claim 5 was rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Miller et al in view of U.S. Patent No. 5,834,107 to Wang et al.

d. Claims 23 and 35 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Miller et al. in view of WO 00/02638 to Boggs et al.

Applicants respectfully submit that the claims as amended are novel and patentable over the cited references for at least the following reasons.

Sole independent claim 1 recites a method for the preparation of a polymeric support matrix having particulate material entrapped in said support matrix in which the polymeric support matrix is porous and the particles are well accessible and maintain their functionality after preparation, said method comprising providing a mixture of polymeric material and particulate material in a solvent for the polymeric material and extruding said mixture into a fibre and solidify said fibre by a two-step phase inversion process, wherein the two-step phase inversion process comprises: (i) utilizing a spinneret to allow the controlled flow of a liquid, a vapor or a gas as an exterior medium of the nascent fiber, resulting in a first phase separation of the exterior of the nascent fiber; (ii) entering of said fiber into a coagulation bath, resulting in further phase separation and arrest of the structure of said fiber, to obtain a hollow or solid fiber containing about 60-95 wt% of particulate material.

Miller et al. discloses methods for making separation membranes, using air-gap spinning, wherein while the fiber is spinning, a gas or liquid may be injected into the bore of a hollow fiber extrudate to maintain the configuration of the hollow fiber. That is, Miller et al. merely discloses controlling the fiber configuration on the inside, i.e., the bore.

Miller et al. does not disclose or suggest that a fiber is produced by two-step phase inversion comprising controlled flow of a liquid, a vapor or a gas as an exterior medium of the nascent fiber, as recited in present claim 1. Miller et al.'s process is not different from the prior art discussed in the background of the present specification in that the fibers exiting the spinneret are briefly exposed to an air gap (col. 8, lines 41-46). Miller et al.'s process does not yield the porosity necessary to have the particulate material well accessible after manufacture. In fact, Miller et al. yields membranes having a solid outer surface. On the contrary, the presently claimed process can provide fibers having a porous outside surface, thereby rendering the particles accessible.

Present claim 1 further distinguishes from Miller et al. in that the particulate material is comprised in a support matrix. Miller et al. teaches spinning a composite fiber by simultaneously co-extruding sheath and core polymer solutions, to form a fiber formed of a dense or asymmetric layer containing polymer and zeolite, and a microporous polymeric layer which structurally supports the separating layer (col. 6, lines 24-31). The Office Action acknowledges the co-extrusion of a particle-free polymeric support of Miller et al. (*see* page 4 of the Office Action.)

Further, the concentration of particles in the membrane of Miller et al. is relatively low, for example, ratios of zeolite/polymer of about 10-40% (col. 6, lines 11-21) or 5-40% (col. 5, lines 4-5). In fact, Miller et al. avoids high loading (e.g., over 40 wt. % zeolite) because of alleged brittleness and blocking (col. 5, lines 20-25). As such, Miller et al. does not disclose a

method of producing a hollow or solid fiber containing about 60-95 wt. % of particulate material, as recited in present claim 1. See also page 5, fourth paragraph of the Office Action.

In summary, Miller et al. does not disclose (i) control of the exterior surface of the nascent fiber, (ii) particulate material entrapped in a support matrix, and (iii) about 60-95 wt. % particulate material. As such, Miller et al. does not disclose or anticipate present claim 1.

Miller et al. pertains to composite membranes including a supportive polymeric layer and a polymeric layer containing up to 40% zeolite particles next to and around the support layer. As noted above, Miller et al. distinguishes itself from the prior art membranes that tend to be brittle (col. 1, lines 52-57 and col. 5, lines 20-25). Specifically, Miller et al. ascribes drawbacks to those membranes including primarily the zeolites and discloses a different process involving much less particles to avoid the alleged disadvantages of brittleness and pore blocking. As such, Miller et al. teaches away from employing a polymeric layer containing more than 40% zeolite particles.

Furthermore, Miller et al. does not suggest (i) applying a mixture of solvent and non-solvent on the exterior of the membrane rather than on the bore side, (ii) controlling porosity of the outer surface of the membrane, or (iii) controlling air-gap technology on the outside of the membrane.

Moreover, it would not have been obvious to apply the membrane technology of Miller et al. to the field of a porous fiber because there is no reasonable expectation to achieve satisfactorily high numbers on particulate loading with Miller et al.'s membrane.

Dongfei et al. is cited for the disclosure that hollow fiber membranes are extruded with a triple orifice spinneret wherein the nascent fiber is passed though an air gap leaving the spinneret and further solidified in a coagulation medium to form the membranes. Wang et al. is cited for the disclosure of a highly porous synthetic polymeric membrane material which comprises a dope mix containing polyvinylpyrrolidone or polyethylene glycol as additives.

Boggs et al. is cited for the disclosure of membranes for removing organic compounds which include a polymeric matrix and a particulate material immobilized within the matrix. As Dongfei et al., Wang et al. and Boggs et al. do not rectify the above noted deficiencies of Miller et al., the combinations of Miller et al. and Dongfei et al., Wang et al. or Boggs et al. still would not result in the subject matter of present claim 1.

In view of the foregoing, Applicants respectfully submit that claim 1 is novel and patentable over Miller et al., alone or in combination with Dongfel et al., Wang et al. and Boggs et al., and thus the rejections should be withdrawn. Additionally, claims 2-5, 7 and 9-35 depend from claim 1, directly or indirectly, and thus are patentable over the cited references at least by virtue of their dependency.

III. Conclusion

From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order and such action is earnestly solicited. If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned at his earliest convenience.

Respectfully submitted,

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